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| EXAMINER | |
|---|---|
| MAHMOUDZADEH, NIMA | |
| **ART UNIT** | **PAPER NUMBER** |
| 2477 | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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| *Office Action Summary* | **Application No.** 10/825,654 | **Applicant(s)** KISHORE ET AL. | |
|---|---|---|---|
| | **Examiner** NIMA MAHMOUDZADEH | **Art Unit** 2477 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 July 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-26 and 31-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26 and 31-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's amendment filed on 07/13/2010 has been entered. Claims 1-26 and 31-34 are still pending in this application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 8, 10, 21, 23, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli (US Patent No. 6,980,520) in view of West et al. (US Patent No. 7,006,438).

**Regarding claim 1,** (Currently Amended) Erimli teaches a method of managing flow of datagram traffic, the method comprising:

receiving datagrams from a first port of a first device (Fig. 1, data transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right) at a first port of a second device (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces) using a pathway that is operably connected to a second port of the first device and a second port of the second device (Fig. 1, connection between left and right multiport switch);

determining (Column 7, lines 1-10 discloses a second switch receives –detects- the MAC control pause frame and suspends transmission to multiport switch 180 of data frames having the source address included in the pause frame. When a second switch receives the pause frame, it stops sending data frames associated with the source address included in the pause frame to the first switch. The second switch may also forward a similar pause frame via the network), an individual port on the first device that is causing oversubscription of the first port of the second device (Column 7, lines 1-10 discloses the second switch may also identify the port associated with the source address included in the pause frame. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address);

receiving datagrams from a third port of the first device at the first port of the second device using the pathway while the individual port on the first device is paused (Fig. 1 and Fig. 3. Also, column 10, lines 63-65 discloses the multiport switch 180B, however, may continue to transmit data frames to multiport switch 180A having other source addresses); and

transmitting a pause frame from the second device to the first device (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address), the pause frame causing the individual port to pause transmission of the datagrams using the pathway (Column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address. Fig. 1), but fail to disclose transmitting the pause frame independently of a source address of the datagrams. However, West et al. disclose transmitting the pause frame independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the

egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate.

**Regarding claim 2,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method further comprising:

Re-activating the individually paused port including transmitting a re-activation signal to the paused port (Column 1, lines 32-41 discloses the pause frame instructs the stations receiving the pause frame to stop sending data for a period of time).

**Regarding claim 3,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method further comprising:

re-activating the individually paused port pursuant to the detection of a condition wherein the first port of the second device has datagram traffic flowing there through in an amount that is below a lower trigger value (Column 8, lines 58-67 discloses the congestion signal may include the source address of the data packet that caused the free buffer queue to reach the predetermined threshold).

**Regarding claim 4,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method further comprising:

re-activating the individually paused port pursuant to the passage of a pre\-determined time increment (Column 1, lines 32-41 discloses the pause frame instructs the stations receiving the pause frame to stop sending data for a period of time).

**Regarding claim 5,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method wherein the transmitting the pause frame comprises using in-band control frames to pause the individual port (Fig. 3, discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information. Also, FIG. 6 illustrates an exemplary MAC control pause frame 600. The MAC control pause frame 600 also includes a source address field 610 that identifies the source address associated with the frame causing the congestion).

**Regarding claim 6,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method wherein the transmitting the pause frame comprises using separate pathways between the first and second networked devices to transmit datagrams and control frames (Fig. 2, discloses the data bus 215 may include one or more conductors that connect the receiver 205, the transmitter 210, the IRC 245, and the external memory interface 265. Also, Fig. 3 , discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information).

**Regarding claim 8,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method wherein the transmitting the pause frame comprises referencing a listing of ports that are over-subscribed (Fig. 6. field 610).

**Regarding claim 10,** Erimli in view of West et al. teach the method of claim 1, Erimli further teaches the method wherein the determining comprises determining individual ports on devices other than the first and second device (Column 7, lines 1-29 and FIG. 3 illustrates an exemplary implementation of the present invention in which two multiport switches, labeled 180A and 180B, are coupled together).

**Regarding claim 21,** (Currently Amended) Erimli teaches a communications device comprising:

a first communications means for receiving datagrams from a first port of a first data distribution means device (Fig. 1, data transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right) at a first port of a second data distribution means (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces);

determining means for determining (Column 7, lines 1-10 discloses a second switch receives –detects- the MAC control pause frame and suspends transmission to multiport switch 180 of data frames having the source address included in the pause frame. When a second switch receives the pause frame, it stops sending data frames associated with the source address included in the pause frame to the first switch. The second switch may also forward a similar pause frame via the network), individual ports on the first data distribution means that cause oversubscription of the first port of the second data distribution means (Column 7, lines 1-10 discloses the second switch may

also identify the port associated with the source address included in the pause frame. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address);

means for transferring receiving datagrams from a second port of the first data distribution means (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address) at the first port of the second data distribution means, while the individual ports are paused (Column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address. Fig. 1); and

control means for selectively pausing the individual ports that are causing oversubscription of the first port of the second data distribution means (Column 7, lines 1-10 discloses the second switch may also identify the port associated with the source address included in the pause frame. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address), but fail to teach pausing feature independently of a source address of the datagrams. However, West et al. teach pausing feature independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is

active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate.

.**Regarding claim 23,** Erimli in view West et al. teach the device of claim 21, further comprising storage means for storing information concerning which ports in the network are over-subscribed (Fig. 3, element 240).

**27-30. (Cancelled)**

**Regarding claim 31,** Erimli teaches a communications device comprising:

an interconnect port controller configured to receive datagrams from a first port of a first device at a first port of the device; and

a memory unit controller configured to determine, at the device, individual ports on the first device that cause oversubscription of the first port of the device (Fig. 1, data

transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right), wherein

the interconnect portion controller is configured to selectively pause the individual ports of the first device that are causing oversubscription of the first port of the device (Fig. 3, Flow Control Logic 225), and to receive datagrams from a second port of the first device at the first port of the device, while the individual ports are paused (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces. Also, column 10, lines 63-67) but fail to teach pausing feature independently of a source address of the datagrams. However, West et al. teach pausing feature independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate.

**Regarding claim 32,** Erimli in view of West et al. teach the device of claim 31, further comprising:

a memory unit configured to store information concerning which ports in the device are over-subscribed (Fig. 2, discloses the data bus 215 may include one or more conductors that connect the receiver 205, the transmitter 210, the IRC 245, and the external memory interface 265. Also, Fig. 3 , discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information)..

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli in view of West et al. and further in view of Kim et al. (US Patent Publication No. 2003/0219027).

**Regarding claim 7,** (Currently Amended) Erimli in view of West et al. teach the method of claim 1, wherein the transmitting the pause frame (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address) but fail to teach using a non-memory-consuming communication to pause the individual port. However, Kim et al. teach using a non-memory-consuming communication to pause the individual port (Paragraph [0007] discloses the non-memory semiconductor performs a traffic transmission

between ports in network equipment such as a router and switch, and performs a programming for an intelligent switching function in such a way that various kinds of multimedia Internet traffic services are available).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Erimli in view of West et al. to include the non-memory feature taught by Kim et al. in order to increase the speed of the communication and reduce the delay that is caused by buffers.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli in view of West et al. and further in view of Montalvo et al. (US Patent Publication No. 2003/0147385).

**Regarding claim 9,** (Currently Amended) Erimli in view of West et al. teach the method of claim 8, wherein the transmitting the pause frame (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address) but fail to teach the method wherein periodically updating the listing of ports that are over-subscribed. However, Monralvo et al. teach the method wherein periodically updating the listing of ports that are over-subscribed (Paragraph [0054] discloses the mapping in the table 512 in ingress switching device 110 is reassigned to change the port assignment such that the egress traffic of an over-subscribed intermediate port on the egress switching device 160 is diverted to an under-subscribed intermediate port. The QID-to-intermediate port mapping is preferably updated periodically, every sixty seconds in some embodiments).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Erimli in view of West et al. to include the periodically updating the table of paused ports taught by Montalvo et al. in order to have the updated information known throughout the network and as a result less delay and increased precision.

7. Claims 11-20, 24, 26, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli in view of West et al. and further in view of Levine (US Patent No. 6,504,818).

**Regarding claim 11,** (Currently Amended) Erimli teaches a method of managing flow of datagram traffic, the method comprising:

receiving datagrams from a first port of a first device (Fig. 1, data transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right) at a first port of a second device (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces) using a pathway that is operably connected to a second port of the first device and a second port of the second device (Fig. 1, connection between left and right multiport switch);

determining (Column 7, lines 1-10 discloses a second switch receives –detects- the MAC control pause frame and suspends transmission to multiport switch 180 of data frames having the source address included in the pause frame. When a second switch receives the pause frame, it stops sending data frames associated with the source

address included in the pause frame to the first switch. The second switch may also forward a similar pause frame via the network), an individual port on the first device that is causing oversubscription of the first port of the second device (Column 7, lines 1-10 discloses the second switch may also identify the port associated with the source address included in the pause frame. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address);

signaling the first port of the first device to continue sending send fewer datagrams to the first port of the second device (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address), based on the determining when an over-subscription is detected at the first port of the second device (Column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address. Fig. 1); and

receiving datagrams from a third port of the first device at the first port of the second device using the pathway that is operably connected to the second port of the first device and the second port of the second device, while continuing to receive the datagrams from the first port of the first device at the first port of the second device (Fig. 1 and Fig. 3. Also, column 10, lines 63-65 discloses the multiport switch 180B, however, may continue to transmit data frames to multiport switch 180A having other source addresses), but fail to teach sending features independently of a source address of the

datagrams. However, West et al. teach sending features independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface). Also, fail to teach the transmission and reception at a reduced rate. However, Levine teaches the transmission and reception datagrams at a reduced rate (Column 1, lines 45 - 65 discloses if a global congestion threshold is exceeded, the egress port generates a feedback control signal to all sources causing the sources to reduce the rate at which they deliver data to the network for delivery to the egress port. Other control schemes provide for local congestion detection, in which the egress port identifies individual sources from which it receives data. If data received from any one source exceeds a local congestion threshold associated with the source, the egress port generates a second type of feedback control signal to the source causing it to reduce the rate at which it generates data for the egress port).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate. Furthermore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify a method of Erimli in view of West et al. to include the rate reduction taught by Levine in order to reduce delay and increase the dependability of the network communications.

**Regarding claim 12,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches wherein the signaling comprises signaling the first port of the first device to send datagrams in proportion to a total number of datagrams attempting to reach the first port of the second device (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces).

**Regarding claim 14,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches the method wherein the signaling comprises broadcasting a signal that alerts ports on the network that the first port of the second device is over-subscribed (Column 8, lines 4-15 discloses multicasting which is a controlled broadcast).

**Regarding claim 15,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches the method wherein the receiving

datagrams from a first port of a first device at a first port of a second device comprises referencing a listing of ports on the network that are over-subscribed before transferring a datagram between the first port of the first device to the first port of the second device (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces).

**Regarding claim 16,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches the method further comprising: resuming unrestricted datagram receipt at the first port of the second device including broadcasting a signal (Column 1, lines 32-41 discloses the pause frame instructs the stations receiving the pause frame to stop sending data for a period of time. Also, column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces).

**Regarding claim 17,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches the method further comprising: resuming unrestricted datagram receipt at the first port of the second device when a total number of datagrams attempting to reach the first port of the second device falls below a lower trigger value (Column 8, lines 58-67 discloses the congestion signal may include the source address of the data packet that caused the free buffer queue to reach the predetermined threshold).

**Regarding claim 18,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teach the method further comprising: resuming unrestricted datagram receipt at the first port of the second device after passage of a pre-determined time increment (Column 1, lines 32-41 discloses the pause frame instructs the stations receiving the pause frame to stop sending data for a period of time).

**Regarding claim 19,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teach the method wherein the signaling comprises using in-band control frames (Fig. 3, discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information. Also, FIG. 6 illustrates an exemplary MAC control pause frame 600. The MAC control pause frame 600 also includes a source address field 610 that identifies the source address associated with the frame causing the congestion).

**Regarding claim 20,** Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teaches the method wherein the signaling comprises using a separate link to transmit control frames (Fig. 2, discloses the data bus 215 may include one or more conductors that connect the receiver 205, the transmitter 210, the IRC 245, and the external memory interface 265. Also, Fig. 3 , discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information).

**Regarding claim 24,** (Currently Amended) Erimli teaches a communications device comprising:

first communications means for transferring receiving datagrams from a first port of a first data distribution means (Fig. 1, data transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right) at a first port of a second data distribution means (Column 3, lines 53-65 discloses the transceivers 130 may include 10/100 Mb/s physical layer transceivers that communicate with the multiport switches 180 via respective serial media independent interfaces or reduced media independent interfaces);

determining means (Column 7, lines 1-10 discloses a second switch receives – detects- the MAC control pause frame and suspends transmission to multiport switch 180 of data frames having the source address included in the pause frame. When a second switch receives the pause frame, it stops sending data frames associated with the source address included in the pause frame to the first switch. The second switch may also forward a similar pause frame via the network), for determining an individual port on the first data distribution means that is causing oversubscription of the first port of the second data distribution means (Column 7, lines 1-10 discloses the second switch may also identify the port associated with the source address included in the pause frame. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address); but fail to teach sending fewer datagrams independently of a source address of the datagrams. However, West et al. teach sending fewer datagrams independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are

active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate.

Further more, control means for signaling the first port of the first data distribution means to send datagrams to the first port of the second data distribution means (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address), based on the determining when an over subscription is detected at the first port of the second data distribution means (Column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address. Fig. 1); and

means for transferring datagrams from a second port of the first data distribution means at the first port of the second data distribution means, while continuing to receive datagrams from the first port of the first data distribution means at the first port of the second data distribution means (Fig. 1 and Fig. 3. Also, column 10, lines 63-65 discloses the multiport switch 180B, however, may continue to transmit data frames to multiport switch 180A having other source addresses). But fail to teach the transmission and reception at a reduced rate. However, Levine teaches the transmission and reception datagrams at a reduced rate (Column 1, lines 45 - 65 discloses if a global congestion threshold is exceeded, the egress port generates a feedback control signal to all sources causing the sources to reduce the rate at which they deliver data to the network for delivery to the egress port. Other control schemes provide for local congestion detection, in which the egress port identifies individual sources from which it receives data. If data received from any one source exceeds a local congestion threshold associated with the source, the egress port generates a second type of feedback control signal to the source causing it to reduce the rate at which it generates data for the egress port).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify a method of Erimli in view of West et al. to include the rate reduction taught by Levine in order to reduce delay and increase the dependability of the network communications.

**Regarding claim 26,** Erimli in view of West et al. and further in view of Levine teach the device of claim 24, Erimli further teaches the device further comprising:

storage means for storing information concerning which ports in the network are over-subscribed (Fig. 3, element 225).

**Regarding claim 33,** (Currently Amended) Erimli teaches a communications device comprising:

an interconnect port controller configured to receive datagrams from a first port of a first device at a first port of the device (Fig. 1, data transmission from element 110 of the left Multiport Switch to element 110 of element 180 on the right. Also, Fig. 3, element 225); and

a memory unit controller configured to determine, at the device, individual ports on the first device that cause oversubscription of the first port of the device (Column 7, lines 1-10 discloses a second switch receives –detects- the MAC control pause frame and suspends transmission to multiport switch 180 of data frames having the source address included in the pause frame. When a second switch receives the pause frame, it stops sending data frames associated with the source address included in the pause frame to the first switch. The second switch may also forward a similar pause frame via the network. Also, column 8, lines 45-48 discloses if a resource on the multiport switch 180A becomes congested, the multiport switch 180A may selectively request suspension of data transmissions from a particular source address), wherein

the interconnect port controller is configured to signal the first port of the first device (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address) to continue sending datagrams to the first port of the second device, based on the determining, and

configured to receive datagrams from the first port of the first device at the first port of the device (Fig. 1 and Fig. 3. Also, column 10, lines 63-65 discloses the multiport switch 180B, however, may continue to transmit data frames to multiport switch 180A having other source addresses). But fail to teach sending feature independently of a source address of the datagrams. However, West et al. teach sending feature independently of a source address of the datagrams (Column 5 lines 51-59 discloses if backpressure signals are active, the transmission of the corresponding category of data is stopped to avoid egress port buffer overflow. Lower priority data can be transmitted when the backpressure signal is active for higher priority data. Also, claim 14, discloses if an amount of data stored in one of the egress queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to a corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface), and also fail to teach the transmission and reception at a reduced rate. However, Levine teaches the transmission and reception datagrams at a reduced rate (Column 1, lines 45 - 65 discloses if a global congestion threshold is exceeded, the egress port generates a feedback control signal to all sources causing the sources to reduce the rate at which they deliver data to the network for delivery to the egress port. Other control schemes provide for local congestion detection, in which the egress port identifies individual sources from which it receives data. If data received from any one

source exceeds a local congestion threshold associated with the source, the egress port generates a second type of feedback control signal to the source causing it to reduce the rate at which it generates data for the egress port).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pause frame transmission method of Erimli to include port-based pause transmission taught by West et al. in order to decrease the congestion cause by overloading ports for specific type of data and to increase the high priority data success rate. Furthermore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify a method of Erimli in view of Bordogna et al. to include the rate reduction taught by Levine in order to reduce delay and increase the dependability of the network communications.

**Regarding claim 34,** Erimli in view of West et al. and further in view of Levine teach the device of claim 33 , Erimli further teaches the device further comprising:

a memory unit configured to store information concerning which ports in the network are over-subscribed (Fig. 2, discloses the data bus 215 may include one or more conductors that connect the receiver 205, the transmitter 210, the IRC 245, and the external memory interface 265. Also, Fig. 3 , discloses the flow control logic 225 may then generate a MAC control pause frame including this source address information).

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli in view of West et al. and further in view of Levine and further in view of Kim et al. (US Patent Publication No. 2003/0219027).

**Regarding claim 13,** (Previously Presented) Erimli in view of West et al. and further in view of Levine teach the method of claim 11, Erimli further teach the method wherein the signaling is performed (Column 7, lines 1-10 discloses the second switch may then transmit a similar MAC control pause frame on the port associated with the source address) but fail to teach the method using a non-memory-consuming communication to signal the first port of the first device. However, Kim et al. teach the method using a non-memory-consuming communication to signal the first port of the first device (Paragraph [0007] discloses the non-memory semiconductor performs a traffic transmission between ports in network equipment such as a router and switch, and performs a programming for an intelligent switching function in such a way that various kinds of multimedia Internet traffic services are available).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Erimli in view of West et al.and further in view of Levine to include the non-memory feature taught by Kim et al. in order to increase the speed of the communication by reducing the delay that is caused by buffers.

9. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erimli (US Patent No. 6,980,520) in view of West et al. further in view of Leach, JR. et al (US Patent Publication No. 2002/0089994).

**Regarding claim 22,** (Currently Amended) Erimli in view of West et al. teach the device of claim 21 wherein, further comprising: a second communications means between the first data distribution means and the second data distribution means

(Column 11, lines 21-28 disclose connection using other source addresses) but fail to explicitly teach the system wherein the second communications means that is non-lossy. However, Leach Jr et al. teach the system wherein the second communications means that is non-lossy (See paragraph [0008]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication means disclosed by Erimli in view of West et al. to perform as a lossy less communication link taught by Leach,, JR et al. in order to increase the quality of communication and decrease the delay caused by it.

**Regarding claim 25,** (Currently Amended) Erimli in view of West et al. teach the device of claim 24, wherein further comprising: a second communications means for allowing communication between the first the second data distribution means is attached to, wherein the a second communications means (Column 11, lines 21-28 disclose connection using other source addresses), but fail to teach the system wherein the second communications means that is non-lossy. However, Leach, JR. et al teach the system wherein the second communications means that is non-lossy (See paragraph [0008]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication means disclosed by Erimli in view of West et al. to perform as a lossy less communication link taught by Leach,, JR

et al. in order to increase the quality of communication and decrease the delay caused by it.

## ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-26 and 31-34 have been considered but are moot in view of the new ground(s) of rejection.

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIMA MAHMOUDZADEH whose telephone number is (571)270-3527. The examiner can normally be reached on Monday - Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag G. Shah can be reached on (571) 272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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